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10/790,142

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EXAMINER

LEE, SHUN K

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/790,142

Applicant(s)

SENDAI ET AL.

Examiner

Shun Lee

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-19 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 20-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0304.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the foreign application (2003-076831 filed in Japan on 20 March 2003) for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application number, country, day, month and year of its filing.

2. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application (2003-076831) filed in Japan on 20 March 2003. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of the foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6, and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Farrokhnia *et al.* (US 6,231,231).

It should be noted that a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim (MPEP § 2114). Thus, “used for” was not given any patentable weight since visual and/or quantitative evaluation does not impose any structural limitations on the claimed phantom.

In regard to claim 1, Farrokhnia *et al.* disclose (Figs. 1-3) a phantom (100, 200, 300) for use in inspection of radiation imaging system which inspection is carried out by evaluating a radiation image obtained by imaging said phantom by using said radiation imaging system as to at least one image quality evaluation item, said phantom (100, 200, 300) comprising:

(a) a base plate (110, 210, 310);

(b) a first member (150, 160, 170, 250, 260, 270, 350, 360, 370) disposed on said base plate (110, 210, 310) and having a first image quality evaluating pattern (e.g., 290, 295, 180, 390, 395) formed thereon to be used for evaluation as to a predetermined image quality evaluation item; and

(c) a second member (150, 160, 170, 250, 260, 270, 350, 360, 370) disposed on said base plate (110, 210, 310) and having a second image quality evaluating pattern (e.g., 375) formed thereon to be used for evaluation as to said predetermined image quality evaluation item.

In regard to claim 2 which is dependent on claim 1, Farrokhnia *et al.* also disclose (Figs. 1-3 and 12-14) that said first image quality evaluating pattern (e.g., 290, 295, 180, 390, 395) includes at least one of a wire mesh pattern formed of plural kinds of wire meshes having different wire pitches, a bar pattern and a radial pattern in the case where said predetermined image quality evaluation item is sharpness (column 6, lines 5-21; column 6, line 49 to column 7, line 3) of said radiation image; and said second image quality evaluating pattern (e.g., 375) includes at least one of a edge pattern, a slit pattern and a rectangular wave pattern in the case where said predetermined image quality evaluation item is the sharpness (column 7, lines 18-58) of said radiation image.

In regard to claim 3 which is dependent on claim 1, Farrokhnia *et al.* also disclose (Figs. 1-3 and 11) that said first image quality evaluating pattern (e.g., 1110, 1120, 1130) includes a Burgere's phantom constituted of a plurality of members in which either one of size and thickness is different between said plurality of members in the case where said predetermined image quality evaluation item is contrast resolution (column 5, line 52 to column 6, line 4) of said radiation image.

In regard to claim 4 which is dependent on claim 1, "used for" was not given any patentable weight since it does not impose any structural limitations on the empty region

of the claimed phantom. Farrokhnia *et al.* also disclose (Figs. 1-3) that an empty region (135) is formed in said base plate.

In regard to claim 6 which is dependent on claim 1, Farrokhnia *et al.* also disclose (Figs. 1-3 and 10) that said first and second image quality evaluating patterns (e.g., 152, 154) include step-like patterns formed of a plurality of metal plates having thicknesses different from each other in the case where said predetermined image quality evaluation item is one of linearity and dynamic range (column 5, lines 31-51) of said radiation image.

In regard to claim 8, Farrokhnia *et al.* disclose (Figs. 1-3) a phantom (100, 200, 300) for use in inspection of radiation imaging system which inspection is carried out by evaluating a radiation image obtained by imaging said phantom by using said radiation imaging system as to at least one image quality evaluation item, said phantom (100, 200, 300) comprising:

- (a) a base plate (110, 210, 310);
- (b) at least one member (150, 160, 170, 250, 260, 270, 350, 360, 370) disposed on said base plate (110, 210, 310) and having an image quality evaluating pattern (e.g., 190, 195) formed thereon to be used for a predetermined image quality evaluation item; and
- (c) a plurality of markers (130, 140, 230, 240, 330, 340), respectively disposed at a plurality of positions different from each other on said base plate (110, 210, 310), for use of detecting a position of said image quality evaluating pattern (e.g., 190,

195) in said radiation image (*i.e.*, landmarks; column 5, lines 21-30; column 7, line 59 to column 8, line 11).

In regard to claim **9** which is dependent on claim 8, Farrokhnia *et al.* also disclose (Figs. 1-3) that said plurality of markers (130, 140, 230, 240, 330, 340) have radiation transmittances different (column 5, lines 15-21) from that in other region of said phantom (100, 200, 300).

In regard to claim **10** which is dependent on claim 8, Farrokhnia *et al.* also disclose (Figs. 1-3) that said plurality of markers (130, 140, 230, 240, 330, 340) have shapes different from that of said image quality evaluating pattern (*e.g.*, 190, 195).

In regard to claim **11** which is dependent on claim 8, Farrokhnia *et al.* also disclose (Figs. 1-3) that said plurality of markers (130, 140, 230, 240, 330, 340) includes at least three markers.

6. Claims 20, 22, 24, 31, and 33 are rejected under 35 U.S.C. 102(a) as being anticipated by Farrokhnia *et al.* (US 6,694,047).

In regard to claim **20**, Farrokhnia *et al.* disclose a medical image processing apparatus for evaluating image quality of a radiation image obtained by using a radiation imaging system, thereby performing inspection of said radiation imaging system, said medical image processing apparatus comprising:

- (a) position detecting means (column 10, line 63 to column 11, line 20; column 11, line 44 to column 12, line 51) for detecting, when image data representing a radiation image obtained by imaging a phantom having an image quality evaluating pattern as to at least one image quality evaluation item and a plurality

- of markers respectively disposed at a plurality of positions different from each other by using said radiation imaging system is inputted, a position of said phantom in said radiation image by using said plurality of markers;
- (b) comparison and calculating means (column 12, lines 52-63) for comparing the position of said phantom detected by said position detecting means with a reference position of said phantom in said radiation image, and calculating an amount, of difference in a linear direction and a rotational direction;
- (c) search area changing means (column 12, line 64 to column 13, line 16) for changing a search area, which is a region within said radiation image to be measured as to a predetermined image quality evaluation item, on the basis of the amount of difference calculated by said comparison and calculating means;
- (d) physical amount calculating means (column 13, line 46 to column 15, line 60) for performing measurement as to said predetermined image quality evaluation item within the search area changed by said search area changing means, and calculating a physical amount representing characteristic of said radiation image;
- (e) determination criterion changing means (column 13, line 46 to column 15, line 60) for changing a determination criterion to be used for determining the image quality of said radiation image, on the basis of the amount of difference calculated by said comparison and calculating means; and
- (f) determination means (column 13, line 46 to column 15, line 60) for determining the image quality of said radiation image by using said physical amount calculated by



said physical amount calculating means, on the basis of the determination criterion changed by said determination criterion changing means.

In regard to claim **22**, Farrokhnia *et al.* disclose a medical image processing apparatus for evaluating image quality of a radiation image obtained by using a radiation imaging system, thereby performing inspection of said radiation imaging system, said medical image processing apparatus comprising:

- (a) position detecting means (column 10, line 63 to column 11, line 20; column 11, line 44 to column 12, line 51) for detecting, when image data representing a radiation image obtained by imaging a phantom having an image quality evaluating pattern as to at least one image quality evaluation item and a plurality of markers respectively disposed at a plurality of positions different from each other by using said radiation imaging system is inputted, a position of said phantom in said radiation image by using said plurality of markers;
- (b) comparison and calculating means (column 12, lines 37-51) for comparing the position of said phantom detected by said position detecting means with a reference position of said phantom in said radiation image, and calculating an amount of difference in a linear direction and a rotational direction;
- (c) image correcting means (column 12, lines 37-51) for correcting the position of said phantom in said radiation image so that the amount of difference calculated by said comparison and calculating means is reduced;
- (d) physical amount calculating means (column 13, line 46 to column 15, line 60) for performing measurement with respect to an image of said phantom, of which

position is corrected by said image correcting means, as to a predetermined image quality evaluation item, and calculating a physical amount representing characteristic of said radiation image; and

- (e) determination means (column 13, line 46 to column 15, line 60) for determining the image quality of said radiation image on the basis of the physical amount calculated by said physical amount calculating means.

In regard to claim **24**, Farrokhnia *et al.* disclose a method of evaluating image quality of a radiation image obtained by using a radiation imaging system, thereby inspecting said radiation imaging system, said method comprising the steps of:

- (a) inputting image data representing a radiation image obtained by radiation imaging of a phantom having a plurality of image quality evaluating patterns as to image quality evaluation items including at least measurement of linearity, sharpness and contraction ratio (column 2, line 66 to column 3, line 17);
- (b) detecting a position of said phantom in said radiation image on the basis of the image data inputted at step (a) (column 10, line 63 to column 11, line 20; column 11, line 44 to column 12, line 51);
- (c) performing measurement as to the image quality evaluation items including measurement of at least linearity, sharpness and contraction ratio on the image of said phantom on the basis of the image data inputted at step (a) (column 13, line 46 to column 15, line 60); and
- (d) determining the image quality of said radiation image on the basis of measurement result obtained at step (c) (column 13, line 46 to column 15, line 60).

In regard to claim **31**, Farrokhnia *et al.* disclose a method of evaluating image quality of a radiation image obtained by using a radiation imaging system, thereby inspecting said radiation imaging system, said method comprising the steps of:

- (a) inputting an image data representing a radiation image obtained by radiation imaging of a phantom having an image quality evaluating pattern as to at least one image quality evaluation item and a plurality of markers respectively disposed at a plurality of positions different from each other (column 2, line 66 to column 3, line 17);
- (b) detecting a position of said phantom in said radiation image by using said plurality of markers on the basis of the image data inputted at step (a) (column 10, line 63 to column 11, line 20; column 11, line 44 to column 12, line 51);
- (c) comparing the position of said phantom detected at step (b) with a reference position of said phantom in said radiation image, and calculating an amount of difference in a linear direction and a rotational direction (column 12, lines 52-63);
- (d) changing a search area, which is a region within said radiation image to be measured as to a predetermined image quality evaluation item, on the basis of the amount of difference calculated at step (c) (column 12, line 64 to column 13, line 16);
- (e) performing measurement in the search area changed at step (d) as to said image quality evaluation items, and calculating a physical amount representing characteristic of said radiation image (column 13, line 46 to column 15, line 60);

- (f) changing a determination criterion to be used for evaluating the image quality of said radiation image on the basis of the amount of difference calculated at step (c) (column 13, line 46 to column 15, line 60); and
- (g) evaluating the image quality of said radiation image by using the physical amount calculated at step (e) on the basis of the determination criterion changed at step (f) (column 13, line 46 to column 15, line 60).

In regard to claim 33, Farrokhnia *et al.* disclose a method of evaluating image quality of a radiation image obtained by using a radiation imaging system, thereby inspecting said radiation imaging system, said method comprising the steps of:

- (a) inputting an image data representing a radiation image obtained by radiation imaging of a phantom having an image quality evaluating pattern as to at least one image quality evaluation item and a plurality of markers respectively disposed at a plurality of positions different from each other (column 2, line 66 to column 3, line 17);
- (b) detecting a position of said phantom in said radiation image by using said plurality of markers on the basis of the image data inputted at step (a) (column 10, line 63 to column 11, line 20; column 11, line 44 to column 12, line 51);
- (c) comparing the position of said phantom detected at step (b) with a reference position of said phantom in said radiation image, and calculating an amount of difference in a linear direction and a rotational direction (column 12, lines 37-51);
- (d) correcting the position of said phantom in said radiation image so that the amount of difference calculated at step (c) is reduced (column 12, lines 37-51);

- (e) performing measurement with respect to the image of said phantom, of which position has been corrected at step (d), as to a predetermined image quality evaluation item, and calculating a physical amount representing characteristic of said radiation image (column 13, line 46 to column 15, line 60); and
- (f) determining the image quality of said radiation image on the basis of the physical amount calculated at step (e) (column 13, line 46 to column 15, line 60).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,231,231) in view of Vuylsteke *et al.* (US 5,804,819).

In regard to claim 5 which is dependent on claim 1, the phantom of Farrokhnia *et al.* lacks that said second image quality evaluating pattern includes a scale pattern in the case where said predetermined image quality evaluation item is contraction ratio of said radiation image. Vuylsteke *et al.* teach (column 2, line 57 to column 4, line 30) to provide a ruler, in order to determine geometric distortion. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a scale pattern in the phantom of Farrokhnia *et al.*, in order to determine geometric distortion such as a contraction ratio.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,231,231) in view of Vogl *et al.* (US 4,126,789).

In regard to claim 7 which is dependent on claim 1, the phantom of Farrokhnia *et al.* lacks that said base plate constitutes a part of a case for housing said first and second members; and said phantom further comprises a lid for covering said case. Vogl *et al.* teach (column 2, lines 7-57) to provide a case which can be filled with scattering medium, in order to obtain a phantom which closely simulates the environment of a human body. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a case with a lid which incorporates the base plate of Farrokhnia *et al.*, in order to obtain a modular phantom which can be filled with a scattering medium so as to closely simulate the environment of a human body when so desired.

11. Claims 21, 23, 26, 32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,694,047) in view of Lang (US 2002/0067798).

In regard to claim **21** (which is dependent on claim 20), claim **23** (which is dependent on claim 22), claim **26** (which is dependent on claim 24), claim **32** (which is dependent on claim 31), and claim **34** (which is dependent on claim 33), the apparatus and method of Farrokhnia *et al.* lacks control means for controlling notification of a maintenance center of existence of an abnormality when the determination means has determined that abnormality of the image quality exists in said radiation image. Lang teaches (paragraphs 7-23) that x-ray images and/or data (e.g., calibration images and associated data) can be distributed over a network to a variety of different recipients for further analysis and/or action. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a control means for controlling notification which is connected to a network in the apparatus and method of Farrokhnia *et al.*, in order to distribute x-ray images and/or data to a variety of different recipients (e.g., a maintenance center) for further analysis and/or action.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,694,047) in view of Farrokhnia *et al.* (US 6,231,231).

In regard to claim **25** which is dependent on claim 24, the method of Farrokhnia *et al.* lacks that step (d) includes determining the image quality by comparing the measurement result obtained at step (c) with past measurement result. Farrokhnia *et al.* teach (US 6,231,231 column 2, lines 37-42) that trending is known in the art as comparing x-ray system parameters over time to establish a trend of x-ray system parameters, in order to evaluate the x-ray system performance over time. Therefore it would have been obvious to one having ordinary skill in the art at the time

of the invention to perform trending in the method of Farrokhnia *et al.*, in order to evaluate the x-ray system performance over time.

13. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,694,047) in view of Schulze-Ganzlin *et al.* (US 5,539,799).

In regard to claims **27-29**, Farrokhnia *et al.* disclose a method of evaluating image quality of a radiation image obtained by using a radiation imaging system for performing radiation imaging to record radiation image information on a recording medium, reading out the radiation image information from the recording medium to generate image data, subjecting the image data to a predetermined image processing to display or output the radiation image, thereby inspecting said radiation imaging system, said method comprising the steps of:

- (a) inputting an image data representing a radiation image obtained by radiation imaging of a phantom having an image quality evaluating pattern to be used for visual evaluation and an image quality evaluating pattern to be used for quantitative evaluation as to a predetermined image quality evaluation item (column 2, line 66 to column 3, line 17);
- (b) performing quantitative measurement with respect to the image data inputted at step (a) as to said predetermined image quality evaluation item (column 13, line 46 to column 15, line 60); and
- (c) displaying or outputting the radiation image on the basis of the image data inputted at step (a) (column 4, lines 53-55).



The method of Farrokhnia *et al.* lacks displaying result of quantitative evaluation based on the measurement result and at least one of imaging condition when said radiation imaging has been carried out, image reading condition when the radiation image information has been read out from said recording medium, image processing condition when the image processing has been made on the input image data and display condition when said radiation image is displayed and determining the image quality of said radiation image on the basis of measurement result and inspection result obtained by visually observing the displayed or outputted radiation image to perform inspection as to said predetermined image quality evaluation item. Schulze-Ganzlin *et al.* teach (column 1, lines 61-65) that a subjective visual assessment can be further supported or supplemented by a computer-aided analysis of measurement results. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to display the radiation image together with relevant information (e.g., imaging condition and computer-aided analysis of measurement results) in the method of Farrokhnia *et al.*, in order to a subjective visual assessment which is supported or supplemented by a computer-aided analysis of measurement results.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrokhnia *et al.* (US 6,694,047) in view of Schulze-Ganzlin *et al.* (US 5,539,799) as applied to claim 27 above, and further in view of Lang (US 2002/0067798).

In regard to claim 30 which is dependent on claim 27, Lang is applied as in claims 21, 23, 26, 32, and 34 above.

***Allowable Subject Matter***

15. Claims 12-19 are allowed.

16. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be directed to a nonobvious improvement over the invention patented in US Patent 6,231,231 (Farrokhnia *et al.*). The improvement comprises in combination with other recited elements, determination means for determining the image quality of said radiation image on the basis of measurement result obtained by said measuring means and the inspection result inputted by using an inputting means to be used for inputting inspection result as to said predetermined image quality evaluation item obtained by visually observing the displayed or outputted radiation image as recited in claims 12-19.

***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2884

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL

  
CONSTANTINE HANNAHER  
PRIMARY EXAMINER